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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,143	01/19/2006	Norman Yang	2003B0922	8087
23455 7590 12/15/2008 EXXONMOBIL CHEMICAL COMPANY 5200 BAYWAY DRIVE P.O. BOX 2149 BAYTOWN, TX 77522-2149				
EXAMINER				
BULLOCK, IN SUK C				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
12/15/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,143

Applicant(s)

YANG ET AL.

Examiner

In Suk Bullock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Amendment

No claim has been canceled. New claim 15 had been entered. Thus, claims 1-15 are currently pending in this application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0742191 (relying on equivalent US Patent 6,075,174).

US Pat '174 discloses a process for recovering BF_3 from a crude PAO product comprising (a) stripping the heated crude PAO/catalyst mixture in a stripping column having packing or trays to produce an overhead comprising BF_3 and promoter which are uncomplexed, (b) contacting the thermal cracking gas with a cold, liquid olefin stream which contains promoter in an absorber/direct-contact condensation column having internals such as trays or packing to enhance contact between the two phases (abstract; col. 1, line 60 to col. 2, line 60; and col. 4, line 26 to col. 5, line 19).

The difference between US Pat '174 and the claimed invention is that US Pat '174 employs a stripping column instead of the claimed distillation.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used any means of separating the PAO product from the catalyst components which are effective including using distillation. It is noted that the stripping column in the reference have trays which would function similar to a distillation column.

With regard to the materials used for the internal structure of the condenser column, it would have been obvious to select materials which can be effective for processing BF_3 , including the claimed materials, i.e., stainless steel.

Response to Arguments

Applicants' arguments filed 8/22/2008 have been fully considered but they are not persuasive.

Applicants argue that they "are not simply separating the PAO product from the catalyst component as stated in the Office Action; rather Applicants are distilling the PAO product at a temperature sufficient to cause the boron trifluoride and the organic catalyst in the boron trifluoride catalyst complex to dissociate from one another into their uncomplexed forms." The Examiner respectfully disagrees that the Office Action stated that the PAO is simply separated from the catalyst component. As a matter of fact, the Office Action states that the reference discloses a "separation" step wherein an overhead is produced comprising "BF₃ and promoter which are uncomplexed" (see step a of the Office Action above). Clearly, the reference teaches dissociating BF₃ from a promoter (i.e., organic catalyst as claimed by Applicants). Also, see the sole figure in the reference which shows uncomplexed BF₃ and promoter.

Applicants argue that "such low temperatures below 80 °C would not be sufficient to dissociate boron trifluoride-organic catalyst complex as claimed by Applicants in Claim 1." The argument is not persuasive because the reference is given full faith and credit as being true and reliable. Hence, the teaching by the reference that BF₃-promoter complex dissociates at 80° C is taken to be a fact unless proven otherwise by Applicants. It is, also, noted that no specific dissociation temperature is recited in Claim 1. Since the reference discloses 80° C temperature causes dissociation of the BF₃-promoter complex, the limitations of Claim 1 is met by the reference.

With regard to the argument that Claim 15 recites a dissociation temperature of 220° C, it is a matter of routine experimentation to determine the requisite temperature at which a dissociation occurs for a particular BF₃-promoter complexed catalyst. Furthermore, although the reference discloses a preferred temperature not exceeding 80° C, one skilled in the art can take any higher temperature including the claimed temperature of 220° C depending upon polymerization temperature.

Applicants argue, "Presedo does not teach or suggest a recycled boron trifluoride-organic catalyst having a 30% greater saturation as claimed." The argument is not persuasive because Presedo discloses a contacting step (col. 5, lines 15-19) which is similar to the claimed contacting step and, therefore, the recycled boron trifluoride-organic catalyst should have similar amount of saturation as claimed including greater than 30% greater saturation.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/In Suk Bullock/
Examiner, Art Unit 1797

